

PCT

WORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau



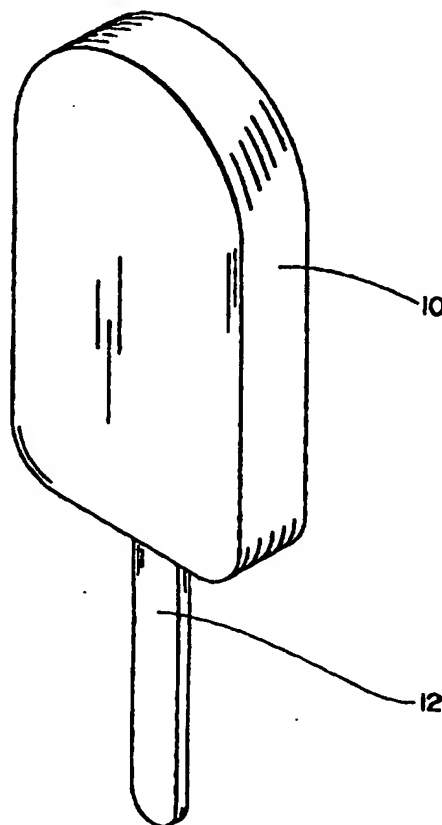
INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 6: A23G 9/02	A1	(11) International Publication Number: WO 97/15199
		(43) International Publication Date: 1 May 1997 (01.05.97)
(21) International Application Number: PCT/CA96/00708 (22) International Filing Date: 25 October 1996 (25.10.96) (30) Priority Data: 60/007,060 25 October 1995 (25.10.95) US (71)(72) Applicant and Inventor: MACLEOD, George [CA/CA]; Site 179, Comp. 6, R.R. #1, Penticton, British Columbia V2A 6J6 (CA). (74) Agent: EDWARDS, Antony, C.; 206 - 347 Leon Avenue, Kelowna, British Columbia V1Y 8C7 (CA).		(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, US, UZ, VN, ARIPO patent (KE, LS, MW, SD, SZ, UG), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG). Published <i>With international search report.</i> <i>Before the expiration of the time limits for amending the</i> <i>claims and to be republished in the event of the receipt of</i> <i>amendments.</i>

(54) Title: **FROZEN CONFECTION CONTAINING ALCOHOLIC BEVERAGE**

(57) Abstract

The present invention is an alcoholic liquid confection which is stable and rigid when frozen so as to be stable and rigid when vertically supported on a stick (12) frozen into the confection (10) or when vertically free standing, where the alcoholic liquid confection includes a stabilizable solution of a first volume of alcoholic liquid into which is dissolved a second volume of thickening and stabilizing means for thickening and stabilizing the stabilizable solution upon freezing of the stabilizable solution, wherein the second volume is sufficient to semi-rigidly solidify and stabilize the stabilizable solution without jellifying the stabilizable solution, and wherein said first volume of alcoholic liquid may be a first volume of alcoholic liquid from the class of alcoholic liquids containing wine, sparkling wine, beer, cider, mixed cocktails, and mixed and unmixed liqueur drinks.



FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AM	Armenia	GB	United Kingdom	MW	Malawi
AT	Austria	GE	Georgia	MX	Mexico
AU	Australia	GN	Guinea	NE	Niger
BB	Barbados	GR	Greece	NL	Netherlands
BE	Belgium	HU	Hungary	NO	Norway
BF	Burkina Faso	IE	Ireland	NZ	New Zealand
BG	Bulgaria	IT	Italy	PL	Poland
BJ	Benin	JP	Japan	PT	Portugal
BR	Brazil	KE	Kenya	RO	Romania
BY	Belarus	KG	Kyrgyzstan	RU	Russian Federation
CA	Canada	KP	Democratic People's Republic of Korea	SD	Sudan
CF	Central African Republic	KR	Republic of Korea	SE	Sweden
CG	Congo	KZ	Kazakhstan	SG	Singapore
CH	Switzerland	LI	Liechtenstein	SI	Slovenia
CI	Côte d'Ivoire	LK	Sri Lanka	SK	Slovakia
CM	Cameroon	LR	Liberia	SN	Senegal
CN	China	LT	Lithuania	SZ	Swaziland
CS	Czechoslovakia	LU	Luxembourg	TD	Chad
CZ	Czech Republic	LV	Latvia	TG	Togo
DE	Germany	MC	Monaco	TJ	Tajikistan
DK	Denmark	MD	Republic of Moldova	TT	Trinidad and Tobago
EE	Estonia	MG	Madagascar	UA	Ukraine
ES	Spain	ML	Mali	UG	Uganda
FI	Finland	MN	Mongolia	US	United States of America
FR	France	MR	Mauritania	UZ	Uzbekistan
GA	Gabon			VN	Viet Nam

FROZEN CONFECTION CONTAINING ALCOHOLIC BEVERAGE

Field of the Invention

5 The present invention relates to food, and more particularly, to a recipe and method of making an alcoholic liquid confection of a consistency so that it may be frozen and formed onto a stick or the like. In particular for use with wine, the recipe results in a frozen wine confection having approximately 90% wine which when frozen is sufficiently firm to remain on a stick.

Background of the Invention

10 In the prior art, rigid frozen flavoured sugar water concoctions dispensed on sticks such as POPSICLE™ frozen confections are known. Fruit sorbets are also known. What is not known, and which is not taught nor suggested in the prior art of which the Applicant is aware, is
15 how to combine a POPSICLE™ dessert format so that the confection has a alcohol content by the inclusion of alcoholic liquid. In particular, there is no indication in the prior art of which the Applicant is aware of how to make a frozen alcoholic confection which is both sufficiently rigid to be presented either vertically free standing or on a stick and which remains sufficiently palatable to appeal to the consuming public.

20 Potentially relevant patents and publications of which the Applicant is aware are as follows:

Inventor or Country
of RegistrationPatent Number

25 Kaneda
 London
 Japan

 4,789,734
 2,139,836
 406233655

	Italy	311,066
	Japan	3,039,550
	Japan	3,049,064
	British	326,447
5	Japan	0,043,678
	Japan	0,037,972
	Ashmont	4,790,999
	Kocharian	4,350,712
	Publication: Wines and Vines (August 1937)	

10
Kocharian discloses a frozen beer or wine confection supporting device, but does not disclose how, that is, a recipe or method, to solidify the beer or wine and in particular so that it adheres to a stick. British Patent No. 326,447 discloses solidification of alcohol with pectin into firm shapes of a jellied substance for tablets or lozenges having advantages in handling and in medical use.

15
The rest of the references generally relate to soft ice-cream or ices. London discloses a liquor-containing frozen confection which also includes milk, cream and sugar. The Wines and Vines Publication discloses frozen compositions which contain wine, sugar, acid and pectin. Ashmont discloses a ready-to-eat alcoholic soft ice composition. Kaneda discloses a frozen dessert which includes a small percent of fruit wine. Japanese Patent '655 discloses a beer ice cream including cream, powder milk, stabilizer and ice cream base. The Italian patent discloses ice cream having a wine base. Japanese Patent '550 discloses a beer-flavoured sherbet comprising beer, sweeteners, stabilizer, water, milk products and vegetable cream products. Japanese Patent '064 discloses solidified liquor product for mixing with ice cream. The solidified liquor is made from wine or other liquor and sugar.

20
The references disclose use of wine, cream, sugar, and a stabilizer such as gelatine. None of the prior art specifically addresses the difficulties in getting the correct consistency for a structurally rigid and stable frozen alcoholic confection, and, in particular, of the correct

consistency to adhere the frozen confection to a stick or so that it is sufficiently rigid to be vertically free-standing, for example in a dessert presentation, and yet which remains palatable, for example, that which is not merely a jelly.

5 Summary of the Invention

10 In summary, in a first aspect, a structurally stable frozen alcoholic liquid confection is provided having in a ratio of approximately 72 parts alcoholic liquid: 9 parts whipping cream: 18 parts sugar: ½ part neutral gelatine in a frozen homogenous mixture of 89% alcoholic liquid by volume and 11% whipping cream by volume in which is dissolved the sugar and the neutral gelatine.

15 In a second aspect, the present invention is an alcoholic liquid confection which is stable and rigid when frozen so as to be stable and rigid when vertically supported on a stick frozen into the confection or when vertically free standing, where the alcoholic liquid confection includes a stabilizable solution of a first volume of alcoholic liquid into which is dissolved a second volume of thickening and stabilizing means for thickening and stabilizing the stabilizable solution upon freezing of the stabilizable solution, wherein the second volume is sufficient to semi-rigidly solidify and stabilize the stabilizable solution without jellifying the stabilizable solution, and wherein said first volume of alcoholic liquid may be a first volume of alcoholic liquid from the class of alcoholic liquids containing wine, sparkling wine, beer, cider, mixed cocktails, and mixed and unmixed liqueur drinks.

20 In a further aspect the second volume of thickening and stabilizing means is not less than 1.0 oz by weight and not greater than 1.5 oz by weight of gelatine of equivalent amounts of like thickening and stabilizing agents dissolvable into said first volume of alcoholic liquid, and the first volume of alcoholic liquid is 128 oz by volume of alcoholic liquid, or wherein the ratio

of the first volume to the second volume in the stabilizable solution is 128 oz by volume:1.0-1.5 oz by weight of gelatine or equivalent of like thickening agent respectively.

5 In yet a further aspect, the alcoholic liquid is of the class including only wine, sparkling wine or the like, or of the class including only beer, cider or the like, or of the class including only mixed cocktails or the like, or of the class including only mixed and unmixed liqueur drinks or the like.

10 Advantageously, the stabilizable solution is mixed with a volume of whipped cream, and/or a volume of sweetening agent dissolved into the stabilizable solution, wherein the sweetening agent may be sugar, and/or is mixed with a volume of emulsifier, wherein the emulsifier may be egg whites.

15 In a third aspect, the present invention is a method for making an alcoholic liquid confection which is stable and rigid when frozen so as to be stable and rigid when vertically supported on a stick frozen into the confection or when vertically free standing, where the alcoholic liquid confection includes a stabilizable solution of a first volume of alcoholic liquid into which is dissolved a second volume of thickening and stabilizing means for thickening and stabilizing the stabilizable solution upon freezing of said stabilizable solution, wherein the second
20 volume is sufficient to semi-rigidly solidify and stabilize the stabilizable solution without jellifying the stabilizable solution, and wherein the first volume of alcoholic liquid may be a first volume of alcoholic liquid from the class of alcoholic liquids containing wine, sparkling wine, beer, cider, mixed cocktails, and mixed and unmixed liqueur drinks, the method including the steps of:

- 25
- (a) measuring a first volume of the alcoholic liquid and a second volume of thickening and stabilizing means wherein the second volume so measured

is sufficient to semi-rigidly solidify the stabilizable solution upon freezing of the stabilizable solution without jellifying the stabilizable solution,

- (b) separating a small volume from the first volume of alcoholic liquid leaving a remainder of the first volume of alcoholic liquid,
- (c) heating the small volume of the first volume until the second volume of thickening and stabilizing means is dissolveable into the small volume of the first volume,
- (d) dissolving the second volume of thickening and stabilizing means into the small volume of the first volume so as to form the stabilizable solution,
- (e) mixing the small volume of the first volume with the remainder of the first volume of alcoholic liquid,
- (f) agitating the stabilizable solution,
- (g) freezing the stabilizable solution in the mould, and
- (h) removing the mould.

In a further aspect, the method includes the further step of inserting a stick into the stabilizable solution so as to leave a handle portion of the stick protruding from the stabilizable solution and freezing the stabilizable solution with the stick inserted and the handle portion protruding.

Advantageously, the method of making an alcoholic liquid confection the further steps of dissolving a volume of sweetening agent into the small volume of the first volume of alcoholic liquid, and/or mixing a volume of whipped cream with the stabilizable solution prior to agitating and chilling the stabilizable solution mixing a volume of emulsifier with the stabilizable solution prior to agitating and chilling the stabilizable solution.

Further advantageously, the method of making an alcoholic liquid confection includes the step, prior to separating the small volume from the first volume, of measuring an

amount of the first volume and an amount of the second volume so that the ratio of the amount of the first volume to the amount of the second volume is 128 oz by volume:1.0 oz - 1.5 oz by weight of gelatine or equivalent amounts of other thickening and stabilizing agents respectively.

5 **Brief Description of the Drawings**

Figure 1 is, in perspective view, one embodiment of the frozen alcoholic confection of the present invention.

10 **Detailed Description of the Preferred Embodiments**

In a preferred embodiment, for a frozen wine confection, the ingredients of the preferred method consist of wine (the alcoholic liquid), sugar (the sweetening agent), neutral gelatine (the thickening and stabilizing agent), whipping cream (enhancing presentation, texture and palatability), and egg whites (the emulsifying agent) in the following relative amounts:

128 oz wine (by volume)
16 oz whipping cream (by weight)
32 oz sugar (by volume)
1.2 oz neutral gelatine (by weight)
2 egg whites

Approximate yield from this recipe depends on the volumetric size of each serving, but may be 78 frozen wine confections. This recipe is adjustable in the amounts so long as the percentage or relative amounts of ingredients remain constant. The granulated sugar and gelatine powder are mixed with the liquids, so that the sugar and gelatine dissolve. Once the sugar and gelatine are dissolved, by volume, the liquids are of three parts; wine (or other alcoholic liquid except neat alcohol such as scotch, tequila or like un-mixed, undiluted "hard" liquor), whipping cream and egg white. Thus in the recipe of the preferred embodiment, the liquids, once mixed

form, for example, an 89% alcoholic liquid by volume. A similar method and recipe is employed for a beer frozen confection or frozen confection made from other alcoholic liquid such as cider.

5 The recipe may be altered to vary sugar content so as to achieve a sweeter or less sweet finished product. Further, vegetable by-products such as Xanthin gum (vegetable gum) as a thickening agent and sodium alginate (seaweed) as a preservative may be substituted for animal by-products such as gelatine and egg whites in the equivalent amounts to obtain the same result. The whipping cream content may be altered to achieve varied consistency.

10 As depicted in Figure 1, the confection 10 may be mounted on a stick 12 such as a twig or a conventional POPSICLE™ stick. The surface roughness of the stick assists maintaining the confection, once frozen, on the stick. The recipe gives sufficient firmness for the confection to stand upright once frozen, without overly restricting the amount of alcoholic liquid in the confection and without overly affecting palatability by the use of too much thickener which
15 results in a jelly-like or rubbery consistency. It is an object to maximize the amount of alcoholic liquid in the confection while maintaining palatability by minimizing the amount of thickener.

Advantageously, Gewurztraminer wine may be used as providing a pleasing flavour in a frozen state when combined with the other ingredients according to the recipe. However,
20 other varieties of wines or various varieties of beers or alcoholic mixture, such as mixed cocktail drinks, may also be employed as further described below. The resulting frozen product may be coated in chocolate, but this is not necessary for structural rigidity of the product and in fact may detract from such structural rigidity.

25 The structurally rigid and stable frozen alcoholic liquid confection of the present invention also has advantages other than it will remain on a stick. The fact that it is vertically stable once frozen allows for artistic creativity in the presentation of alcoholic desserts and the like

in that free-standing sculptures or moulded forms may be presented that may be eaten as a dessert and yet which have significant alcoholic content and palatability.

One method of making the above structurally stable frozen alcoholic liquid confection is to, first, measure out the quantities of the dry and liquid ingredients in the amounts, or like ratios, as set out above; second, mix the dry ingredients into a homogenous liquid heated mixture of a small (example 2 cups) of heated alcoholic liquid which has been brought to a boil or otherwise heated sufficiently to dissolve the gelatine, whereby the sugar and gelatine are fully dissolved; third, pour the mixture back into the remainder of the alcoholic liquid required to bring the total amount of alcoholic liquid to the amount called for by the recipe, where advantageously the remainder of the alcoholic liquid may be cool or pre-chilled (but not frozen); forth, agitate the entire mixture in a chilled container so the ingredients do not separate, for example, by using an ice cream machine; fifth, when the mixture reaches a slush-like consistency add the egg whites, which have been whipped in a separate container, and pour the mixture into a mould, inserting a stick for holding the resulting confection, if a POPSICLE™-like presentation is desired; sixth, continue freezing the mixture in the mould until solid; and seventh, remove the mould.

Variants of this method are possible keeping in mind that the underlying basis of the recipe and method according to the present invention is the combination of alcoholic liquid, whether it be in the class of alcoholic liquids containing wine, beer, cider, champagne or the like, or whether it be in the class of alcoholic liquids containing mixed cocktail-like drinks including margaritas, daiquiris, pina coladas or the like, or whether it be in the class of alcoholic liquids where liquers are mixed to provide mixed liquer drinks such as KALHUA™ and cream or to provide "shooter"-type drinks such as B-52s, or the like, in the correct ratio with a thickening and stabilizing agent such as gelatine. Thus in the preferred embodiment first set out above, 1.2 oz by weight of neutral gelatine are specified. This is a preferred embodiment although a range of weights of gelatine may be used in that recipe. In particular, in the above recipe calling for 1.2 oz by weight of neutral gelatine, the weight of neutral gelatine which may be advantageously

employed is greater than or equal to 1.0 oz but less than or equal to 1.5 oz of neutral gelatine by weight. The sugar ingredient is merely a sweetner and can be substituted with calorie-reduced sweetners such as SWEET 'N LOW™ or the like in equivalent proportions to result in the same level of desired sweetness. Whipping cream may be added for taste, texture and appearance. The egg whites act as an emulsifier contributing to the smoothness of the texture. Thus it may be seen that as a minimum one of the preferred recipes and methods according to the present invention would be to dissolve 1.2 oz of neutral gelatine by weight in 128 oz of wine by volume and to freeze this solution according to the fourth through seventh steps set out above, with the exception of adding egg whites.

Palatability however will usually call for a sweetener in some amount, egg whites as an emulsifier and whipping cream for texture.

In preferred embodiments, the recipe and method of the present invention where the alcoholic liquid is beer or cider will typically call for less than four cups of sugar to provide agreeable taste. In the class of alcoholic liquids including wine and champagne, less than or equal to four cups of sugar may be called for. In the class of alcoholic liquids including mixed cocktails, the amount of sugar required is reduced, to approximately one cup as an example, in view of the existing sugar content in the mixed cocktails themselves assuming such cocktails have been mixed according to standard and accepted bar recipes. Similarly, in the class of alcoholic liquids including liqueurs, the amount of sugar required is greatly reduced from that required in beer or wine confections because of the already existing level of sweetness in the liqueurs themselves.

It is understood that where the recipe and method of the present invention calls for, for example gelatine or egg whites, that equivalents may be substituted so long as the functional equivalent ratio of the substituted element is employed. Substitutes for gelatine may include carrageen, hydro xypropylmethyl cellulose, locust bean gum, guar gum, alginates, agar, xanthan

gum and galactomannas. Substitutes for egg whites may include mono di-glycerides, lecithin (soya product), sorbiton mono stearate and agar.

5 As will be apparent to those skilled in the art in the light of the foregoing disclosure, many alterations and modifications are possible in the practice of this invention without departing from the spirit or scope thereof. Accordingly, the scope of the invention is to be construed in accordance with the substance defined by the following claims.

WHAT IS CLAIMED IS:

1. An alcoholic liquid confection which is stable and rigid when frozen so as to be stable and rigid when vertically supported on a stick frozen into the confection or when vertically free standing, comprising:

a stabilizable solution of a first volume of alcoholic liquid into which is dissolved a second volume of thickening and stabilizing means for thickening and stabilizing said stabilizable solution upon freezing of said stabilizable solution,

wherein said second volume is sufficient to semi-rigidly solidify and stabilize said stabilizable solution without jellifying said stabilizable solution,

and wherein said first volume of alcoholic liquid may be a first volume of alcoholic liquid from the class of alcoholic liquids containing wine, sparkling wine, beer, cider, mixed cocktails, and mixed and unmixed liqueur drinks.

2. The alcoholic liquid confection of claim 1 wherein said second volume of thickening and stabilizing means is not less than 1.0 oz by weight and not greater than 1.5 oz by weight of gelatine of equivalent amounts of like thickening and stabilizing agents dissolvable into said first volume of alcoholic liquid,

and wherein said first volume of alcoholic liquid is 128 oz by volume of alcoholic liquid,

or wherein the ratio of said first volume to said second volume in said stabilizable solution is 128 oz by volume:1.0-1.5 oz by weight of gelatine or equivalent of like thickening agent respectively.

3. The alcoholic liquid confection of claim 2 wherein said alcoholic liquid is of the class including only wine, sparkling wine or the like.
- 5 4. The alcoholic liquid confection of claim 2 wherein said alcoholic liquid is of the class including only beer, cider or the like.
5. The alcoholic liquid confection of claim 2 wherein said alcoholic liquid is of the class including only mixed cocktails or the like.
- 10 6. The alcoholic liquid confection of claim 2 wherein said alcoholic liquid is of the class including only mixed and unmixed liqueur drinks or the like.
- 15 7. The alcoholic liquid confection of claim 2 wherein said stabilizable solution is mixed with a third volume of whipped cream.
8. The alcoholic liquid confection of claim 2 wherein said stabilizable solution includes a third volume of sweetening agent dissolved into said stabilizable solution.
- 20 9. The alcoholic liquid confection of claim 8 wherein said sweetening agent is sugar.
10. The alcoholic liquid confection of claim 2 wherein said stabilizable solution is mixed with a third volume of emulsifier.
- 25 11. The alcoholic liquid confection of claim 9 wherein said emulsifier is egg whites.
12. A method for making an alcoholic liquid confection which is stable and rigid when frozen so as to be stable and rigid when vertically supported on a stick frozen into the confection or when vertically free standing, including:

a stabilizable solution of a first volume of alcoholic liquid into which is dissolved a second volume of thickening and stabilizing means for thickening and stabilizing said stabilizable solution upon freezing of said stabilizable solution,

5 wherein said second volume is sufficient to semi-rigidly solidify and stabilize said stabilizable solution without jellifying said stabilizable solution,

and wherein said first volume of alcoholic liquid may be a first volume of alcoholic liquid from the class of alcoholic liquids containing wine, sparkling wine, beer, cider, mixed
10 cocktails, and mixed and unmixed liqueur drinks,

said method comprising the steps of :

- 15 (a) measuring a first volume of said alcoholic liquid and a second volume of thickening and stabilizing means wherein said second volume so measured is sufficient to semi-rigidly solidify said stabilizable solution upon freezing of said stabilizable solution without jellifying said stabilizable solution,
- (b) separating a small volume from said first volume of alcoholic liquid leaving a remainder of said first volume of alcoholic liquid,
- 20 (c) heating said small volume of said first volume until said second volume of thickening and stabilizing means is dissolveable into said small volume of said first volume,
- (d) dissolving said second volume of thickening and stabilizing means into said small volume of said first volume so as to form said stabilizable solution,
- 25 (e) mixing said small volume of said first volume with said remainder of said first volume of alcoholic liquid,
- (f) agitating said stabilizable solution,
- (g) freezing said stabilizable solution in said mould, and

(h) removing said mould.

5 13. The method of making an alcoholic liquid confection according to claim 12 comprising the further step of inserting a stick into said stabilizable solution so as to leave a handle portion of said stick protruding from said stabilizable solution and freezing said stabilizable solution with said stick inserted and said handle portion protruding.

10 14. The method of making an alcoholic liquid confection according to claim 12 comprising the further step of dissolving a third volume of sweetening agent into said small volume of said first volume of alcoholic liquid.

15 15. The method of making an alcoholic liquid confection according to claim 12 further comprising the step of mixing a third volume of whipped cream with said stabilizable solution prior to agitating and chilling said stabilizable solution.

16. The method of making an alcoholic liquid confection according to claim 12 comprising the step of mixing a third volume of emulsifier with said stabilizable solution prior to agitating and chilling said stabilizable solution.

20 17. The method of making an alcoholic liquid confection according to claim 12 further comprising the step, prior to separating said small volume from said first volume, of measuring an amount of said first volume and an amount of said second volume so that the ratio of said amount of said first volume to said amount of said second volume is 128 oz by volume:1.0 oz - 1.5 oz by weight of gelatine or equivalent amounts of other
25 thickening and stabilizing agents respectively.

18. The method of making an alcoholic liquid confection according to claim 12 further comprising the step of selecting said alcoholic liquid from the class of alcoholic liquids including only wine and sparkling wine.
- 5 19. The method of making an alcoholic liquid confection according to claim 12 further comprising the step of selecting said alcoholic liquid from the class of alcoholic liquids including only beer and cider.
- 10 20. The method of making an alcoholic liquid confection according to claim 12 further comprising the step of selecting said alcoholic liquid from the class of alcoholic liquids including only mixed cocktails.
- 15 21. The method of making an alcoholic liquid confection according to claim 12 further comprising the step of selecting said alcoholic liquid from the class of alcoholic liquids including only mixed and unmixed liqueur drinks.

1/1

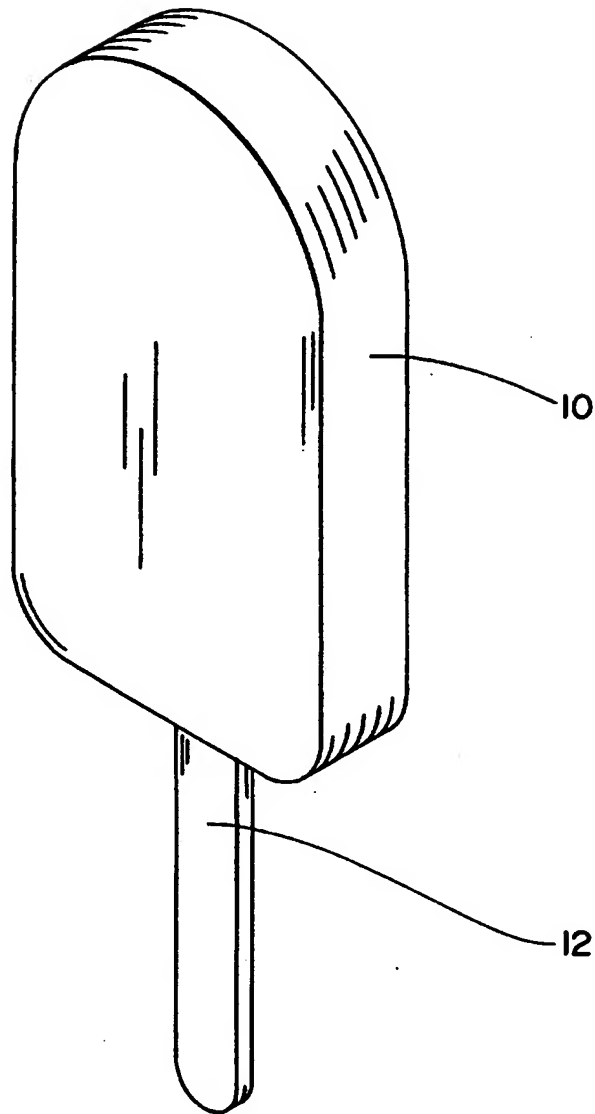


FIG. 1

INTERNATIONAL SEARCH REPORT

International Application No
PCT/CA 96/00708

A. CLASSIFICATION OF SUBJECT MATTER

IPC 6 A23G9/02

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 6 A23G

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	CA 2 092 844 A (ZIZZI MAUREEN) 30 September 1994 See abstract and specification. ---	1,3-6,8, 9,12,13, 18-21
X	DATABASE WPI Week 8814 Derwent Publications Ltd., London, GB; AN 88-096804 XP002024803 & JP 63 049 064 A (OKA T.) , 1 March 1988 see abstract --- -/--	1

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents :

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *A* document member of the same patent family

Date of the actual completion of the international search

10 February 1997

Date of mailing of the international search report

26.02.97

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Guyon, R

INTERNATIONAL SEARCH REPORT

Int. Appl. No.
PCT/CA 96/00708

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>DATABASE WPI Week 9021 Derwent Publications Ltd., London, GB; AN 90-159698 XP002024859 & JP 02 100 665 A (UEDA SEIYU ET AL.) , 12 April 1990</p>	1-6,9,10
Y	<p>see abstract</p>	12-14, 16-18
Y	<p>DE 28 23 320 A (U. R. G. SCHNEIDER) 13 December 1979 see the whole document</p>	12-14, 16-18
A	<p>FR 979 071 A (ANCIENNE MAISON BEAUMONT) 23 April 1951 see the whole document</p>	1
A	<p>DE 30 43 648 A (E. EITNER) 27 May 1981 see page 10, line 1-21; claims 1,7-9,13</p>	1
A	<p>NL 7 113 466 A (J. G. CAPRILES) 3 April 1973 see the whole document</p>	1
A	<p>PATENT ABSTRACTS OF JAPAN vol. 009, no. 166 (C-290), 11 July 1985 & JP 60 037972 A (YOSHIDA HIRSHI), 27 February 1985, see abstract</p>	1
A	<p>US 4 350 712 A (A. KOCHARIAN ET A.) 21 September 1982 cited in the application see the whole document</p>	1

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/CA 96/00708

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
CA-A-2092844	30-09-94	NONE	
DE-A-2823320	13-12-79	NONE	
FR-A-979071	23-04-51	NONE	
DE-A-3043648	27-05-81	NONE	
NL-A-7113466	03-04-73	NONE	
US-A-4350712	21-09-82	NONE	

19



Europäisches Patentamt

European Patent Office

Office européen des brevets

11 Veröffentlichungsnummer:

11 Publication number:

11 Numéro de publication:

0 857 023

**Internationale Anmeldung veröffentlicht durch die
Weltorganisation für geistiges Eigentum unter der Nummer:**

WO 97/15199 (art.158 des EPÜ).

**International application published by the World
Intellectual Property Organisation under number:**

WO 97/15199 (art.158 of the EPC).

**Demande internationale publiée par l'Organisation
Mondiale de la Propriété sous le numéro:**

WO 97/15199 (art.158 de la CBE).